

Claims:

1.-10. (canceled)

11. (previously presented) The method according to claim 23, wherein at least one of the programming devices has at least one of the project design blocks required for designing or configuring the process control system before the copied design blocks are transferred, the method further comprising:

comparing a software version of the at least one project design block to a software version of a corresponding project design block stored in the library; and

replacing upon request by a user entered on said one programming device the at least one project design block with a copy of the corresponding project design block stored in the library, if the software version of the at least one project design block is older than the software version of the corresponding project design block stored in the library.

12. (previously presented) The method according to claim 11, further comprising:
erasing at least one of the references on said one programming device; and
blocking the replacement of such project design block corresponding to the erased referenced.

13. (previously presented) The method according to claim 11, wherein
the user request is displayed on each programming device, and
the at least one project design block on each local programming device is replaced by the corresponding project design block stored in the library if and only if the user request is accepted by the users of all programming devices.

14. (canceled)

15. (previously presented) The engineering system according to claim 20, wherein at least one of the programming devices has at least one of the project design blocks required for designing or configuring the process control system before the copied design blocks are transferred, and the software tool is further configured to:

compare a software version of the at least one project design block to a software version of a corresponding project design block stored in the library; and

replace upon a request by a user entered on said one programming device the at least one project design block with a copy of the corresponding project design block stored in the library, if the software version of the at least one project design block is older than the software version of the corresponding project design block stored in the library.

16. (previously presented) The engineering system according to claim 15, wherein the software tool is further configured to:

erase at least one of the references on said one programming device; and

block the replacement of such project design block corresponding to the erased referenced.

17. (previously presented) The engineering system according to claim 15, wherein:

the user request is displayed on each programming device, and

the at least one project design block is replaced by the corresponding project design block stored in the library if and only if the user request is accepted by a respective user via input at each of the programming devices.

18. (currently amended) A plurality of programming devices for designing or configuring a process control system of actuators, sensors, programmable controllers, and operating and observation stations for controlling a plant, each programming device comprising a software tool configured to:

save references on the programming device, the references indicating project design blocks necessary for designing the process control system;

copy the necessary design blocks to the programming device from a central library of an engineering system via a bus system based on the references;

transfer the copied design blocks to the programming device; and

store the transferred design blocks on the programming device;

wherein the project design blocks comprise software objects representing operating and observation systems, input and output modules, the actuators, the sensors, and software blocks for creating control programs for the programmable controllers;

wherein a given design block is part of at least two different part projects executed on respective different ones of the programming devices, and a copy of the given design block is transferred to each of the respective programming devices; and

wherein the two part-projects are functionally linked for operational data transfer therebetween such that, during operation of the process control system for controlling a plant, data of a programmable controller designed or configured by a first of the part projects is exported to an operating and observation station designed or configured by a second of the part projects.

19. (currently amended) An engineering system for designing or configuring a process control system of actuators, sensors, programmable controllers, and operating and observation stations for controlling a plant, the engineering system comprising:

a management unit comprising a memory unit that stores a central library of project design blocks in the form of software objects comprising representations of operating and observation systems, input and output modules, the actuators, the sensors, and software blocks for creating control programs for the programmable controllers;

a plurality of programming devices connected via a bus system to the memory unit, each of the programming devices storing a respective set of copies of selected ones of the project design blocks as needed for designing or configuring a respective portion of the process control system; and

a software tool that copies the selected project design blocks from the central library to each programming device, and maintains references indicating which project design blocks are copied to each programming device;

wherein a given design block is part of at least two different part projects executed on respective different ones of the programming devices, and a copy of the given design block is transferred to each of the respective programming devices; and

wherein at least two of the part-projects on different programming devices are functionally linked for operational data transfer therebetween such that during operation of the process control system for controlling a plant, data of a programmable controller designed or configured by a first of the part projects is exported to an operating and observation station designed or configured by a second of the part projects.

20. (previously presented) The engineering system of claim 19, wherein the management unit defines a plurality of parts of a project for designing or configuring the process control system, each part comprising a given subset of the project design blocks, wherein the project parts are differently assigned to at least two of the programming devices.

21. (previously presented) The engineering system of claim 19, wherein the software tool protects certified copies of the design blocks in a given programming device from being inadvertently updated by canceling the references to the certified copies, while maintaining references to any of the project design blocks required for expansion of the process control system, wherein current project design blocks are only copied from the management unit to the given programming device that are needed for the expansion.

22. (previously presented) The engineering system of claim 19, further comprising a software routine on the management unit that transmits a user prompt to all of the programming devices when any of the programming devices requests an updated one of the project design blocks, wherein the software routine requires acceptance of the updated design block by a user of each of the programming devices via user input in response to the user prompt, wherein after receiving said acceptance from all of the programming devices the software routine transmits said updated one of the project design blocks to all of the programming devices, wherein a given revision level for said one of the project design blocks is synchronized on all of the programming devices.

23. (previously presented) A method of designing or configuring a process control system of actuators, sensors, programmable controllers, and operating and observation stations for controlling a plant, the method comprising:

providing an engineering system comprising a central management unit connected to a plurality of local programming devices by a bus system;

the central management unit dividing a project for designing or configuring the process control system into a plurality of part projects for execution on a respective plurality of the programming devices, each part project comprising at least one project design block, and at least some of the part projects comprising plural project design blocks;

storing the project design blocks in a central library of a memory unit of the central management unit, the programming devices configured to store local copies of such project design blocks required for designing or configuring the process control system;

saving a reference on each programming device indicating which project design blocks are to be copied from the library to the programming device;

copying the design blocks to be copied from the library to the programming device based on the reference, by the engineering system;

transferring the copied design blocks to the programming device, by the engineering system; and

storing the transferred design blocks on the programming device;

wherein the project design blocks comprise software objects representing operating and observation systems, input and output modules, the actuators, the sensors, and software blocks for creating control programs for the programmable controllers;

wherein a given design block is part of more than one part project, and a copy of the given design block is transferred to more than one of the programming devices for concurrent use; and

wherein part-projects on at least two different programming devices are functionally linked for operational data transfer therebetween.